PROCEEDINGS

OF THE

Hawaiian Entomological Society

VOL. X, No. 2 FOR THE YEAR 1938 DEC., 1939

JANUARY 6, 1938

The 385th regular meeting of the Hawaiian Entomological Society was held at the Experiment Station, H.S.P.A., January 6, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Miss Ethel Lucas, Messrs. Bryan, Browne, Ehrhorn, Holdaway, Illingworth, Keck, Marlowe, Mason, Pemberton, Rosa, Schmidt, Swezey, Van Zwaluwenburg, Williams, and Zimmerman.

Visitor: H. Darwin Kirschman.

The minutes of the previous meeting were read and approved.

The Secretary announced that the Executive Committee had appointed the following officers: Editorial Committee: O. H. Swezey, Editor, E. H. Bryan, Jr., R. H. Van Zwaluwenburg; Curator of collections, F. X. Williams; Librarian, J. S. Rosa.

The Executive Committee also had approved for payment a bill for $193.45 from the Honolulu Star Bulletin for printing 500 copies of Proc. Hawaiian Entomological Society index for Vol. IX.

PAPER PRESENTED

Mr. E. C. Zimmerman presented a paper entitled: "The Rediscovery of *Mauia* in Hawaii (Coleoptera: Anthribidae)."

NOTES AND EXHIBITIONS

Erebus odora (Linn.).—Mr. O. H. Swezey read a letter from Bro. Matthias Newell in which he wrote that he had observed what was most probably *Erebus odora,* many years ago, at Hilo, Hawaii. This considerably antedates the recorded establishment of this moth here in 1928. President Schmidt suggested that Mr. Swezey reply to this interesting letter of Bro. Newell, who is an honorary member of the Society and a keen and accurate observer, and send him the regards of the Society. He further suggested that Bro. Newell be persuaded to write memoirs of his early observations in Hawaii.

Gibbium psylloides (Czemp.).—Mr. Van Zwaluwenburg exhibited numbers of this rare and curious ptinid beetle, obtained on January 5, 1938, by Messrs. Whitney and Caum in a mixture of commercial fertilizer and sulfur. The fertilizer was a special mix-

ture containing large amounts of bone meal and other organic material. The species is cosmopolitan, and occurs throughout the mainland United States. It is found in warehouses, feeding on woolen goods and on other dried animal materials. Only three other specimens are in the H.S.P.A. Experiment Station collection; they were collected singly by Mr. Swezey at Kaimuki, Honolulu, in 1909, 1910, and 1911.

Sylepta aurantiacalis Fisch.—Mr. Swezey exhibited specimens of this pyralid moth which had been handed him for identification by the plant quarantine department. They had been reared from caterpillars brought as food for birds by a passenger on steamer from Japan. A pair of parasites were exhibited also which he had reared from the same lot of caterpillars, the parasites being *Exeristes roborator* (Fab.), a pimpline, which at one time was introduced from Europe to the United States as an enemy of the European corn borer.

Plusia giffardi Swezey.—A specimen of this moth was exhibited by Mr. Swezey. It had issued from a cocoon brought down by Dr. Williams from the mountains, above Mapulehu, Molokai, Dec. 19, 1937. This is the first record of this moth from Molokai. It has previously been collected at Kilauea, Hawaii, and Kaupo, Maui.

Vanessa tammeamea Esch.—Mr. Swezey exhibited a specimen of this native butterfly which was captured by Mrs. Swezey, Dec. 30, 1937, on the porch of their residence in lower Manoa. This butterfly is rarely found so far from its natural habitat in the mountain forests.

New Scolytid.—Mr. Swezey exhibited specimens of a small scolytid beetle which appears not to have been collected before in Hawaii. His specimens were reared from a decaying avocado seed on the ground in his garden, 245 beetles having issued from the one seed. It appears to belong to the subfamily Crypturginae.

Eumerus marginatus (Grimshaw).—Mr. A. C. Browne reported that on Dec. 1, 1937, samples of ginger root grown at Kalahina, Puna, Hawaii, were received, in which maggots were abundant. Rearing the material out, it was found that the syrphid *Eumerus marginatus* was abundant. This is believed to be the first record of this fly appearing in ginger. The following other diptera were also taken:

1. *Neoexaireta spinigera* (Weideman) Fam. Stratiomyiidae.
2. *Euxesta quadrivittata* (Macquart) Fam. Ortalidae.
3. *Atherigona excisa* (Thompson) Fam. Anthomyiidae.
4. *Neosciara molokaiensis* (Grimshaw) Fam. Sciaridae.

Anthonomus eugenii (Cano).—Mr. A. C. Browne reported that young fruits of long eggplant at Waialua, Oahu, were found to be very severely stunted, deformed and scarred. Material taken on Dec. 1, 1937, was held for observation. In addition to *Anthonomus eugenii* which emerged in some numbers, the following forms also were reared:

1. *Araecerus fasciculatus* (Fam. Anthribidae).
2. *Cryptomorpha desjardinsi* (Fam. Cucujidae).
3. *Scymnus bilucernarius* (Fam. Coccinellidae).
4. *Phthorimaea operculella,* male (Fam. Gelechiidae).
5. *Ereunetis minuscula* (Fam. Tineidae).
6. *Pyroderces rileyi* (Fam. Cosmopterygidae).
7. *Petrochroa dimorpha* (Fam. Tineidae).
8. *Zatropis tortricidis* (Pteromalidae).

A species of mite (undetermined) and *Pseudococcus maritimus* (Ehrhorn) were also taken from the fruit, where they were sheltered by the fleshy sepals.

Polistes wasps.—Dr. F. X. Williams stated that on a visit to Mapulehu, Molokai, in December, 1937, he noticed *Polistes* wasps grouped on old nests and in angles of rafters of the lanai of the H.S.P.A. residence. A closer examination of these semi-hibernating wasps showed them to be mainly the darker species, *P. macaensis* (Fabr.) and (or) *hebraeus* Fabr., but that here and there in intimate association with them were a very few of the smaller yellow and black species, *P. fuscatus* (Fabr.) var. *aurifer* (Sauss.).

Lathyrophthalmus aeneus (Scop.).—Mr. E. H. Bryan, Jr., remarked that he had observed this syrphid fly hibernating locally for a time. This species hibernates also on the mainland.

Muscoid flies.—Mr. Bryan reviewed Dr. Charles Townsend's Manual of Myiology, part V, Sao Paulo, 1937, which contains diagnoses and data about muscoid genera from the Glossinini to Agriini (families Glossinidae, Gastrophilidae, Muscidae, Rhiniidae, Calliphoridae, and Stephanostomatidae).

Book review.—Dr. F. G. Holdaway briefly reviewed and exhibited a book by R. E. Snodgrass—"Insects, Their Ways and Means of Living," 1934.

FEBRUARY 3, 1938

The 386th regular meeting of the Hawaiian Entomological Society was held at the Experiment Station, H.S.P.A., on February 3, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Miss Ethel Lucas, Miss Amy Suehiro, Messrs. Bryan, Chock, Donaghho, Ehrhorn, Holdaway, Illingworth, Marlowe, Pemberton, Rosa, Sakimura, Schmidt, Swezey, Williams, and Zimmerman.

Visitors: J. R. Garcia, Jr., and J. Manson Valentine.

The minutes of the previous meeting were read and approved.

Mrs. Helen B. Schmidt was elected to regular membership in the Society.

PAPERS PRESENTED

On behalf of Mr. R. H. Van Zwaluwenburg, Dr. F. X. Williams presented a paper entitled: "Key to Larvae of Hawaiian Elateridae (Coleoptera)."

Mr. E. C. Zimmerman presented a paper entitled: "The Genus Apion in Fiji (Coleoptera: Curculionidae)."

NOTES AND EXHIBITIONS

Mr. Walter Donaghho exhibited carabid beetles and *Odynerus* wasps he had collected on Kauai and Elateridae collected on Molokai.

Dr. F. G. Holdaway exhibited a fine treatise by Dr. Cleveland on Protozoa in Wood-Eating Cockroaches, the same species of protozoa being found also in termites, thus further accentuating the natural relationship between the Blattidae and the termites.

President Schmidt introduced Dr. J. Manson Valentine, Fellow at the B. P. Bishop Museum. Dr. Valentine told of his collecting and faunistic studies in Fiji and New Zealand. His particular interest was in the Caraboidea (Coleoptera), of which many species were added to the Fijiian fauna. Here on Viti Levu two types of ecological habitats were easily recognizable: the north side dry and cultivated or much overgrown with bracken, and the dense forest above this area and extending over the Island. A good deal of hands-and-knees collecting was necessary on the forest floor. There were also arboreal Carabidae, and one species of carabid associated with a savage ant. Two species of Cicindellidae here—the larvae in clay of paths and roadsides.

In New Zealand about 30 different collecting localities were visited on the North Island. Many new carabids collected. Mt. Edgemont was found rich in carabids except on upper slopes.

Upon inquiry by Dr. Schmidt re the status of the *Levuana* moth in Fiji, Dr. Valentine stated that none of this coconut pest was seen, it being under excellent control by imported parasites.

Taro leafhopper enemies.—Mr. Q. C. Chock spoke of D. T. Fullaway's shipments of insect enemies of the Taro leafhopper. To date, Mr. Fullaway had made 5 shipments from the Philippines. There were two egg-parasites (*Ootetrastichus* & *Paranagrus*), and a *Cyrtorhinus* egg-sucking bug. The bug was easily reared and very promising. *Paranagrus* also being reared. It has a life-cycle of 17–18 days.

Dr. Schmidt exhibited an interesting "entomological Christmas card" from Dr. Mendes to Dr. R. N. Chapman.

Ants of Guam.—Mr. Swezey exhibited a collection of ants made in Guam in 1936. It contained all but 2 species of the list of 21 recorded by Dr. Wheeler in 1912 that were collected by Mr. Fullaway in 1911. Besides, there were 7 species not previously recorded, making a total of 26 species for the present lot. Eleven of these also occur in Hawaii. Although 35 species have been recorded in Hawaii, yet in Guam with a smaller number of species, ants seem much more abundant. Many of the species are pretty generally met with and specially abundant. There may be several

species present at a given place and time, as for example: It was common to collect half a dozen species under bark or in rotten log at one time; 9 species were collected in the garden one afternoon; 6 species collected in dead bamboo stumps at one time; 6 species were collected in the residence, 3 of them specially abundant all the time.

MARCH 3, 1938

The 387th regular meeting of the Hawaiian Entomological Society was held at the Experiment Station, H.S.P.A., on March 3, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Miss Ethel Lucas, Miss Amy Suehiro, Messrs. Bianchi, Bryan, Donaghho, Ehrhorn, Holdaway, Illingworth, Keck, Marlowe, Mason, Pemberton, Rosa, Schmidt, Swezey, Van Zwaluwenburg, Williams, and Zimmerman.

Minutes of previous meeting read and approved.

PAPER PRESENTED

Mr. E. C. Zimmerman presented a paper entitled: "A Review of the Hawaiian Mycetophagidae (Coleoptera)."

NOTES AND EXHIBITIONS

Metriona bicolor (Fab.).—On behalf of Mr. Noel Krauss, Mr. R. H. Van Zwaluwenburg exhibited a chrysomelid beetle recently found on Mr. Krauss' trousers cuff, at Merchant & Bishop Sts., Honolulu, Feb. 10, 1938.

Eriophyes sp.—Litchi leaves badly infested by burrowing mites were exhibited by Dr. Illingworth. This is an oriental pest that has been in Hawaii for many years. Specimens were brought to the College of Hawaii in 1916 by Mr. Higgins, who published a bulletin on the Litchii, July 27, 1917. He sent specimens of the mite to Dr. L. O. Howard, who reported that the mite is apparently an undescribed species of *Eriophyes*.

Apanteles sp. on potato tuber moth.—Mr. Pemberton exhibited specimens of a braconid reared from Irish potatoes infested with potato tuber moth larvae, collected in a potato field at Oahu Sugar Co., Ltd., February 14, 1938. This parasite appears to be a species of *Apanteles* introduced into Hawaii from Southern California in 1933 by D. T. Fullaway, for control of the potato tuber moth. This is the first record of field recovery of the species in Hawaii. In addition, small numbers of *Pristomerus hawaiiensis* Perkins and *Chelonus blackburni* Cam. were reared from this material.

Parasites of the cactus scale Diaspis echinocacti (Bouché).—Mr. Swezey exhibited a branch of *Epiphyllum* infested with the cactus scale, from which two kinds of parasites had issued: *Aspidiotiphagus agilior* Berlese, quite numerous from the male scales; and a few of an undetermined encyrtid from the female scales. The latter appeared to be a species not heretofore recorded in Hawaii.

Cryptogonus nigripennis Weise.—Mr. Swezey reported that this little black ladybeetle is now so well established at Hanalei, Kauai, on coconut trees infested with *Pinnaspis buxi* (Bouché) that they are being collected by the thousands for distribution, by entomologists of the Board of Agriculture and Forestry. This is the ladybeetle sent by Mr. Swezey, November 1936, from Guam, where it is efficient in controlling *Aspidiotus destructor* Sign., a scale that at one time was very destructive to coconut trees on Saipan. This scale was prevented from becoming serious on Guam by this little ladybeetle.

Bufo marinus.—Mr. F. A. Bianchi spoke of a record size *Bufo marinus* he recently found at Kapiolani Park, Honolulu. It was nearly 7½ inches long, 15½ inches in girth, and weighed about 2½ lbs.

APRIL 7, 1938

The 388th regular meeting of the Hawaiian Entomological Society was held at the Experiment Station, H.S.P.A., on April 7, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Messrs, Bryan, Ehrhorn, Hadden, Illingworth, McBride, Pemberton, Rosa, Sakimura, Schmidt, Swezey, Williams, and Zimmerman.

Visitors: Richard A. Cooke, Jr., H. Darwin Kirschman, and J. M. Valentine.

Minutes of previous meeting read and approved.

PAPERS PRESENTED

Mr. O. H. Swezey presented a paper entitled: "Sclerogibbidae, a Hymenopterous Family New to Hawaii."

Mr. E. C. Zimmerman presented a paper entitled: "Blepiarda of Fiji."

NOTES AND EXHIBITIONS

Dermestes vulpinus Fab.—Mr. K. Sakimura exhibited some shavings of dried bonito fish obtained in Honolulu infested by this dermestid beetle.

Plagiomerus diaspidis Crawford.—Mr. Swezey reported that Mr. Timberlake had determined for him as this species, the parasite of the cactus scale which he had exhibited at the March meeting. Timberlake had previously reared it from the same scale in greenhouse at Washington, D. C., and Crawford described it from the cactus scale also, which makes it appear to be attached to this scale. A closely related species (*P. hospes*) was described by Timberlake in Hawaii in 1920, from caught specimens, the host not being known.

Catorama mexicana Chev.—Dr. Illingworth exhibited books injured by the larvae of this anobiid beetle. When the library of Dr.

Wm. T. Brigham, sent to Boston in 1927, was unpacked it was found badly damaged by this beetle. R. L. Taylor, of Bussey Institution, Harvard, reported the matter in the Jour. Econ. Ent. Vol. 21, pp. 626–27. He considers that *mexicana* may be a synonym of *C. herbarium* of the West Indies and Brazil. He was informed by the U. S. National Museum many years ago that *mexicana* was a manuscript name never published.

Proscopus veitchi Jordan.—Mr. Zimmerman reported finding a specimen of this anthribid on an unidentified exotic shrub beneath a coconut tree in Foster Gardens, Honolulu, March 19th. This was the first record of the occurrence of this species in Hawaii. It is widely distributed in Polynesia from Fiji eastward through Samoa, the Society Islands to the Marquesas and Mangareva Islands. Mr. Zimmerman collected the species in numbers from dead banana leaves and dead coconut fronds in southeastern Polynesia. The species is probably established on coconuts about Honolulu and may have a wider distribution in our islands. Mr. Zimmerman has included the species in his "Key to the Genera of Hawaiian Anthribidae" in the "Proceedings" for 1937. This species can only be confused with *Exillus lepidus,* in Hawaii, but can easily be distinguished from that species by its elongate, rather than globose, first antennal segment, its lateral prothoracic carina which extends to the apex instead of not past the middle, by the antennae being inserted on the front of the head near the tops of the eyes instead of on the sides of the rostrum, by the eyes which are entire instead of deeply emarginate below and numerous other characters. This insect is evidently a scavenger that feeds on the dead tissues of such materials as dead fronds of coconut and dead banana leaves and is probably of no economic importance.

Apanteles scutellaris Muesebeck.—Mr. Pemberton reported that material of this braconid, which he had reared from potato tuber moth larvae *Phthorimaea operculella* (Zell.), collected at Oahu Sugar Co., Ltd., and mentioned at the previous meeting of this Society, had been sent to Mr. P. H. Timberlake for determination. In a letter dated March 15, 1938, Mr. Timberlake states that the species is as above. This was introduced into Hawaii by the Territorial Board of Agriculture and Forestry from Riverside, California, during 1933. Mr. Pemberton stated that while examining Irish potato plants in Field 39, Oahu Sugar Co., Ltd., in company with Dr. F. G. Holdaway, on March 29th, this parasite was seen in great numbers actively flying over the field and running about on the plants. As many as a dozen could frequently be seen resting on a single plant. There is ample evidence that this introduction is proving of definite value in tuber moth control. The half-grown leaf-mining larvae are attacked and thus prevented from boring into the main stem, which would often result in the splitting apart of the plant and the complete loss of a large amount of the foliage.

Eupristina verticillata Waterst.—Mr. Pemberton exhibited specimens of this agaonid, which is the pollinator of the so-called Chinese Banyan, *Ficus retusa*. During the month of March, 1938, Mr. D. T. Fullaway shipped fruits of this tree from Mayondon, Philippine Islands, to Hawaii, from which several thousand living females of this insect were bred and liberated in *retusa* trees about Honolulu, in an effort to establish the species in order to induce this tree to produce viable seed as part of a reforestation project. It is yet too early to know the results of this work.

Bufo marinus Linn.—Mr. Pemberton stated that he had recently observed adults of this toad consuming quantities of its own young at the border of a pond where toads were abundant, but where insect food was rare.

Chersodromia hawaiiensis.—Dr. F. X. Williams said that Dr. A. L. Melander was describing the empid fly found on Oahuan sea beaches as *Chersodromia hawaiiensis*. The two pairs of paratypes were being divided between the Bishop Museum collection and that of the Hawaiian Entomological Society. He also remarked on the fine development of the Hawaiian dolichopodid genus *Eurynogaster* Van Duzee (1933), about the Gunnera spring at 3600 ft. on Mt. Kaala, Oahu. Path species are not highly metallic in coloration, but those frequenting dripping wet banks and shaded springs, where high lights prevail, are brilliantly purplish green or (and) bluish. Of the latter some half dozen or more frequent this spring. *Eurynogaster binodata* Parent frequents the steep wet rocks along the Kaluanui stream, Koolau Mts., at an altitude of about 2000 ft. It lays its amber colored eggs on the low moss-like growth on wet shaded boulders. It is the largest species of the genus, now numbering 16 or more species. Twenty-nine new species of Hawaiian Dolichopodidae are being described by Abbe Parent bringing the total for the family in the Territory to approximately 90 species. Specimens of *Eurynogaster* were exhibited.

Brachymeria obscurata (Walk.).—Mr. J. S. Rosa stated that he recently found pupae of *Omiodes blackburni* (Butl.) parasitized 14% by this chalcid wasp.

Mr. E. C. Zimmerman gave a brief review of Torre Bueno's Glossary of Entomology.

Mr. F. C. Hadden, here on a vacation from Midway Island, gave a very interesting talk on that Island, composed of Sand Is. and Eastern Is., explaining the building up effect of the bush *Scaevola frutescens* (Miller). Some of the few species of plants and insects were touched upon. The climate is much cooler than here, and sand and windstorms sometimes occur.

May 5, 1938

The 389th regular meeting of the Hawaiian Entomological Society was held at the Experiment Station, H.S.P.A., May 5, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Miss Ethel Lucas, Miss Amy Suehiro, Messrs. Browne, Bryan, Ehrhorn, Hadden, Holdaway, Illingworth, Keck, Marlowe, Mason, McPhail, Pemberton, Rosa, Schmidt, Swezey, Van Zwaluwenburg, Williams, and Zimmerman.

Visitors: William C. Look, Philip M. Weber.

The minutes of the previous meeting were read and approved. It was voted unanimously to re-instate Mr. M. McPhail as a regular member of the Society. He was formerly a member, but has been away for several years.

The matter of recording purposeful introductions of insects and other invertebrates into the Territory was brought up. Mr. E. H. Bryan, Jr., made a motion that these purposeful introductions be recorded and kept up to date, commencing with the revised list made by Mr. O. H. Swezey in May 1929, and that the president of the Society appoint a committee to that end, the members thereof representing the Institutions concerned in these introductions. Seconded by Mr. R. H. Van Zwaluwenburg and passed.

PAPER PRESENTED

Mr. E. C. Zimmerman presented a paper entitled "A New Oodemas from Oahu (Coleoptera: Curculionidae)."

NOTES AND EXHIBITIONS

Ceratitis capitata Wied. in Kamani fruits.—Mr. R. H. Marlowe presented the following data: From June 10 to November 26, 1934, a record was made of the yield and the approximate number of *C. capitata* pupae obtained from the fruit, of an India Almond or Kamani nut tree (*Terminalia catappa*) located at 597 South King St. The tree is about 75 feet high and 40 feet in diameter. The fruit were collected at one to three day intervals. Random samples from each collection were held for infestation counts.

Some nuts matured and dropped before June 10 and after November 26. However, practically all of the fruit matured between June and November. The total number of nuts collected was about 46,800. From these, approximately 337,280 fruit fly pupae were obtained or an average of 7 pupae per nut. The data for the months are: June—13,450 nuts, 122,400 pupae; July—3,700 nuts, 49,215 pupae; August—3,625 nuts, 88,440 pupae; September—4,225 nuts, 17,875 pupae; October—15,750 nuts, 47,250 pupae, and November —6,050 nuts, 12,100 pupae. The infestation of the first crop which was from June to the middle of September, was as high as 25 larvae per nut. The fruit of the second crop were small, hard and flat. The average infestation was from 1 to 4 larvae per fruit.

Willard and Mason in 1933 (Parasitization of the Mediterranean Fruit Fly in Hawaii 1914–33, U.S.D.A. Circular No. 439, 1937) found that 69.4 per cent of the fruit fly larvae in India almonds were parasitized by the various fruit fly parasites. Thus, estimating

that approximately 30 per cent of the 337,280 pupae were not parasitized, the Kamani nut tree produced a potential population of over 100,000 adult fruit flies.

Apanteles glomeratus (Linn.) on Oahu.—Dr. Holdaway and Miss Suehiro reported that numerous *Apantales glomeratus* (L.), the introduced parasite of the cabbage worm *Pontia rapae,* were bred out of a parasitized caterpillar taken at Waipahu on broccoli, April 20, 1938. This is the first recovery of the parasite on Oahu since it was introduced by Mr. Fullaway from Japan in 1923. In 1934, it was collected by Mr. Swezey on Hawaii, from various localities, this being the first indication that it was established here. The Oahu specimens were compared with those in the H.S.P.A. collection by Mr. Swezey, and identified as *A. glomeratus. Pontia rapae* was first noticed in Hawaii in 1898. Same year 4 parasites were introduced: *Apanteles congregatus, Apanteles glomeratus, Copidosoma truncatellum, Pteromalus puparum.*

Of these, only *Pteromalus puparum,* a very small lot, became established. Recorded in 1904 but not seen since. Further introductions of this made in 1910 and 1918, but introductions apparently not successful.

In 1923 Mr. Fullaway made a further attempt to introduce *Apanteles glomeratus.* In 1934, 11 years after its introduction, it was recovered by Mr. Swezey on Hawaii and in 1936 on Maui. The present record is apparently the first of its occurrence on Oahu.

Aonidiella inornata McKenzie.—Miss Suehiro reported this as the new name for the scale insect known in Hawaii as *Chrysomphalus aurantii* (Mask.). In McKenzie's description of *inornata* from the Philippines, it is stated that specimens known in Hawaii as *Chrysomphalus aurantii* (Maskell) probably belonged to this species. (Microentomology, Vol. III, Pt. I, p. 10, 1938.)

Oxacis collaris (Sharp).—Mr. Van Zwaluwenburg reported that on April 13 Mr. Rosa and he observed large numbers of this usually uncommon oedemerid beetle at Niu on the identical coconut trees on which Mr. Pemberton found them so abundantly on July 12, 1937. There were literally thousands of the insects on the palm fronds in July, whereas in April they were present in hundreds. By keeping track of similar outbursts in the future, it may be possible to get an inkling of the number of generations which this little-known beetle produces annually.

Carpophilus maculatus (Murray).—Dr. Ashley C. Browne exhibited a macadamia nut in which he had found this beetle. The nut, smooth and sound, showing no perforation, was secured from a commercial bin in Honolulu.

Orchidophilus aterrimus (Waterh.).—Mr. Swezey exhibited a vial of this orchid weevil recently collected by Dr. H. L. Lyon from *Spathoglottis* growing in the open at his home on Matlock Ave. (46 beetles in the lot). He also exhibited several pseudobulbs of this

orchid which had been destroyed by the larvae of the weevil, and one cut open to show a larva at work.

Dioctes chilonis Cushman.—Mr. Swezey exhibited a male specimen of this rice borer parasite which he had collected from *Lobelia gaudichaudii* near the upper end of the Kipapa Trail which follows up the Waipio-Waiawa Ridge. The trade wind had probably carried this parasite up from the cultivated land below on the windward side of the island, where at present very little if any rice is grown. There is also a possibility that this parasite has taken to breeding on some native caterpillar in the forest of that region.

Termite flight.—Mr. E. M. Ehrhorn remarked that the evening of May 4, which was sultry, was the biggest termite night of the season in Honolulu.

Enallagma civile (Hagen).—Mr. J. S. Rosa recorded this immigrant damselfly as very numerous at Waialua and Kahuku, Oahu. Specimens were shown.

Anomala orientalis (Waterh.).—Dr. C. Schmidt mentioned finding the larvae of this beetle in a pineapple field on Oahu.

African Coccinellidae.—Dr. Schmidt exhibited Coccinellidae—as yet not liberated—that were collected in Africa as enemies of the pineapple mealybug, *Pseudococcus brevipes,* here.

JUNE 2, 1938

The 390th regular meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, Honolulu, June 2, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Miss Ethel Lucas, Miss Amy Suehiro, Messrs. Bianchi, Browne, Ehrhorn, Fullaway, Holdaway, Illingworth, Ito, McBride, Rosa, Sakimura, Schmidt, Swezey, Van Zwaluwenburg, Williams, and Zimmerman.

Visitors: Miss Mabel Chong, Messrs. F. K. Lee, Wm. A. Look, and Philip W. Weber.

The minutes of the preceding meeting were read and approved.

The Secretary announced the names of the committee appointed by the president for the recording of purposeful introductions into the Territory, of insects and other invertebrates, as follows:

Mr. O. H. Swezey (Chairman), representing the H.S.P.A. Experiment Station.

Mr. D. T. Fullaway, for the Territorial Board of Agriculture and Forestry.

Mr. A. C. Mason, for Bureau of Entomology, U.S.D.A.

Dr. F. G. Holdaway, for the University of Hawaii, and

Mr. K. Sakimura, for the P.P.C.A. Experiment Station.

PAPER PRESENTED

Mr. E. C. Zimmerman presented a paper entitled "Identification Tables for the Introduced Hawaiian Nitidulidae (Coleoptera)."

Cryptothrips floridensis Watson.—Mr. Swezey exhibited specimens of a large black thrips, and their work on the camphor tree, brought in by Dr. Lyon May 28 from a tree in his yard which was considerably infested by them; also from a tree in the Foster Park, June 1, 1938. The thrips infest the buds, killing some of them, and causing the new leaves to develop in a crippled condition in others. It appears to be an unrecorded species for Hawaii. Specimens were sent to Mr. Dudley Moulton for determination.

Coptotermes formosanus Shiraki.—Mr. Swezey reported a daytime flight of this termite, occurring all during the forenoon of May 7 and again the next forenoon. The termites issued through a ventilator in the concrete wall below a corner window of the entomology laboratory at the Experiment Station, H.S.P.A. Mynahs and sparrows soon were attracted to the place and began feasting on them. Some of the termites were captured in flight, and others picked up from the ground. The common dragonfly (*Pantala flavescens*) also came in for a share, and a few of another dragonfly. There was a similar flight from the same place the previous year.

Anthonomus eugenii Cano.—Specimens of the pepper weevil were exhibited by Mr. Swezey, who had swept them from the weed *Solanum nodiflorum* growing along the C.C.C. trail at Kealia, Oahu, May 30, 1938.

Cryptogonus nigripennis Weise.—Mr. Swezey reported this little ladybeetle being well established at the Coombs' place at Heeia, Oahu, where coconuts, plume palms, and bananas are badly infested with *Pinnaspis buxi* (Bouché). He had visited the place recently with Mr. Chock of the Board of Agriculture, who had colonized the *Cryptogonus* there from material obtained at Hanalei, Kauai, where the coconuts were similarly badly infested and the lady beetle well enough established so that they could be collected by hundreds. *Cryptogonus* was sent up from Guam by Mr. Swezey in Nov. 1936, and during 1937 became well established at Hanalei. It is the ladybeetle which prevents *Aspidiotus destructor* from damaging coconut trees on Guam. Considerable discussion followed.

Pyroderces rileyi (Walsm.).—Mr. Ashley C. Browne made the following notes on this moth. On May 18, 1938, ripe heads of milo maize were collected in the field on the A. J. Campbell property at Mokuleia, heavily infested with larvae of *Pyroderces rileyi.* Adults were reared in the laboratory from the material. Determination was made by Dr. F. X. Williams. This is believed to be the first record of this moth appearing in milo in the Territory, however as early as 1925 it was reported to be destructive to the crops in the Imperial Valley. It has at times been destructive, also on milo, in both New Mexico and Arizona.

Pinnaspis buxi (Bouché) on persimmon.—Mr. Browne reported that on May 6th, 1938, persimmon leaves heavily infested with *Pin-*

naspis buxi were received from Hilo, Hawaii. From the scale, *Aspidiotiphagus citrinus* was collected, which was later determined by Mr. Fullaway. It is thought that this constitutes the first Territorial record of this scale appearing on persimmon.

Lobodiplosis pseudococci Felt.—Dr. C. Schmidt stated that this cecidomyid is well established on Molokai, Lanai, and Oahu, its larvae preying on the pineapple mealybug.

Achatina fulica (Fer.).—On behalf of Mr. C. E. Pemberton, F. X. Williams exhibited specimens of the eggs and other stages of the Giant African snail, *Achatina fulica* (Fer.), which was found under culture in the homes of a number of Japanese in Honolulu during April, 1938, and in one home on the island of Maui. To date, two separate importations of living snails, totaling 10 adults, are known to have been brought into Hawaii from Japan. Both importations were made in November, 1936, according to information supplied by L. A. Whitney. The importations were made illegally and without the knowledge of the Plant Inspection officers. At the present time (June 2, 1938) the snail has been found established in the open at several places on Maui. It is a serious pest of many garden vegetables and other plants in India, Ceylon, Malaya, Java, and Borneo, where it has been introduced. All colonies found under culture in homes have been confiscated and destroyed, but present evidence of its establishment in the field on Maui greatly increases the probability that it will become permanently established in the Islands.

Mr. K. Sakimura presented a note as follows: Information on *Achatina fulica* in Japan was recently received. The Japanese government discovered several cases of breeding and selling of this giant snail in 1936 spring, and immediately prohibited its further introduction into Japan and also Formosa. Now it is known no case of breeding or selling has been reported.

Anastatus sp.—Two specimens were exhibited by Mr. Swezey of a large banded-winged eupelmid apparently of this genus, which Mr. Ehrhorn had found ovipositing in a cluster of *Holochlora japonica* eggs in his garden, May 12.

Mr. O. H. Swezey mentioned the death on March 31, 1938, of Dr. E. Meyrick, celebrated British lepidopterist.

Mr. D. T. Fullaway mentioned the recent death of the Mr. J. E. A. Lewis, coleopterist, long a resident of Japan.

JULY 7, 1938

The 391st monthly meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, Honolulu, Thursday, July 7, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Miss Ethel Lucas, Miss Amy Suehiro, Messrs. Bianchi, Bryan, Donaghho, Ehrhorn, Fullaway, Holdaway, Mc-

Bride, Pemberton, Sakimura, Schmidt, Swezey, Van Zwaluwenburg, and Williams.

Visitor: Mabel Chong.

The minutes of the preceding meeting were read and approved.

PAPERS PRESENTED

On behalf of Messrs. Carl J. Drake and D. M. Frick (Ames, Iowa), Dr. F. X. Williams presented a paper entitled: "Synonomy and Distribution of the Lantana Lace Bug (Hemiptera: Tingitidae)." Mr. O. H. Swezey presented a paper entitled: "Notes on Oedemeridae in Hawaii and Palmyra."

NOTES AND EXHIBITIONS

Clytus (*Clytanthus*) *pilosus* var. *glabromaculatus* (Goeze).—Mr. F. A. Bianchi submitted the following notes: *Clytus* (*Clytanthus*) *pilosus* Först. var. *glabromaculatus* (Goeze). Three specimens of this beetle are exhibited. They emerged in Honolulu from chestnut-wood fencing imported from France about two months ago by Mr. William Weinrich. Represented in France almost exclusively by the present variety, *Clytus pilosus* has also been reported from Spain, Belgium, and North Africa. Its hosts are many, including chestnut, fig, prune, apple, oak, grape vine, and pear; but the larva, to judge from literature at hand, bores only into dead trees or those already nearly killed by other primary pests. As the beetle is able to oviposit on stripped logs as well as on the bark of trees, it might conceivably infest milled lumber at times, but the fact is not reported.

Aleurodothrips fasciapennis Franklin.—Mr. Bianchi reported that a good many of these thrips, mostly females, were collected during the month of May on the leaves of a large specimen of *Ficus bengalensis* which stands in Kapiolani Park. Later visits, during June and July, show the thrips to have become very scarce. This predacious species was first reported as an inhabitant of Hawaii in August, 1929. One single specimen was intercepted at that time on a shipment of coconuts made from here. Since then the species has been found on Oahu and Molokai on *Emilia* and pineapple plants, but is is apparently uncommon. It is interesting, therefore, to record its abundance on a hitherto unreported host.

Neoclytarlus chenopodii Perkins.—Mr. Swezey exhibited a specimen of this longicorn beetle and a portion of the stem of *Chenopodium oahuensis* from which it had issued. This stem contained 130 exit holes from which beetles had issued. It was obtained June 18, 1938, in the same region near Puu Palikea where Dr. Williams first discovered this beetle in November, 1936.

Geocoris puncticeps (Say).—Mr. Swezey exhibited a specimen of this bug which matured from a nymph swept from the Australian saltbush on the flats west of Makapuu Head, June 22, 1938. Sev-

eral nymphs were secured. They were robust, whitish with black markings. In vial they fed on aphis on hibiscus bud, but finally all died without maturing, except one only.

Gonatocerus sp.—Mr. Swezey exhibited a slide mount of a species of this genus of mymarids, which had not previously been recorded in Hawaii. He had obtained the single specimen, June 23, 1938, found crawling on his hand while sitting in an auto in front of the Post Office in Honolulu. He had looked up in literature about 30 different species of *Gonatocerus,* but could find none with which his specimen agreed.

Tarsonemus latus Banks.—Mr. Swezey reported the broad mite as having recently severely infested three kinds of plants in his garden: marigold, *Tithonia speciosa* and *Datura fastuosa.* At a previous time dahlia was similarly affected. The young terminal portions of the plants had a much crippled growth, the leaves being much crinkled and distorted and somewhat thickened. The mites and their eggs were mostly found on the very youngest foliage. The eggs are distinguished by having rows of white spots on the surface.

Nysius coenosulus Stal.—Mr. Swezey exhibited a vial with 899 of this bug, or a close related species, which were captured with a few sweeps of the net on a low lehua ohia bush on Puu Palikea, Waianae Mts., June 18, 1938. More were captured in the net at the time, but probably half of them escaped while getting the others into a collecting bottle. They were all adults and had no doubt migrated from the lowlands where they had bred on weeds.

Cerambycobius cushmani Crawf.—Mr. Swezey exhibited this eupelmid which he had reared from *Bruchus sallaei* in pods of *Acacia farnesiana* collected near Waianae, Oahu, July 3, 1938. This indicates the widespread establishment of this parasite, as he had previously similarly reared it from Makapuu, the opposite side of the island. Other parasites reared from the same host from Waianae were: *Horismenus* sp., *Lariophagus texanus* Crawf., *Urosigalphus bruchi* Crawford, *Glyptocolastes bruchivorus* Crawf. The *Horismenus* were by far the most abundant. This *Horismenus* seems to be yet undescribed.

Zoratypus swezeyi Caudell.—A mounted specimen of this rare insect was exhibited by Mr. Swezey who had collected 7 of them in an hour's digging in a rotten koa log in Haleauau Valley, Waianae Mts., Oahu, at an elevation of 2500 ft., July 4, 1938.

Ladybeetles on mountain top.—Mr. Swezey reported 5 kinds of ladybeetles found on Puu Palikea, June 18, 1938: *Coelophora inaequalis* (Fab.), *Lindorus lophanthae* (Blaisd.), *Scymnus blucernarius* (Muls.), *Curinus coeruleus* (Muls.), and *Serangium maculigerum* Blkb. These had no doubt migrated from the lowlands.

Odonata at Kawaihapai.—Dr. F. X. Williams submitted the following note: May 30, Kawaihapai, Waialua Plantation Reservoir.

With Mr. O. H. Swezey. This reservoir recently filled high so that the grass and weeds inundated are still in healthy condition. The immigrant *Enallagma civile* in large numbers, the pretty blue males evidently predominating. But some in tandem, seeking to oviposit on stems. *Anax junius* present as adults though sparse, and one *Tramea lacerata* dipping eggs in green algal floats. I gathered a lot of more-or-less immersed grass and *Commelina* and some algae. In the laboratory the material is swarming with a fairly large long-oval ostracod crustacean. Some protozoa. No chironomids seen. *Ischnura posita* quite rare at this reservoir more to be seen along more-or-less shaded nearby paths and brush. This immersed herbage yielded no damselfly eggs or young.

Opius tryoni Cam.—On behalf of Mr. Q. Chock, Mr. D. T. Fullaway spoke of the rearing of a number of this Mediterranean fruit-fly parasite from the lantana gall-fly.

Opius humilis Silv.—Mr. O. C. McBride stated that this Mediterranean fruit-fly parasite seemed to be approaching extinction. A discussion followed.

Conoderus exsul (Sharp).—Mr. R. H. Van Zwaluwenburg stated that in the last number of the Pan-Pacific Entomologist is a record of the occurrence of *Conoderus exsul* (Elateridae) in California.

Mr. C. E. Pemberton said that the giant African snail *Achatina fulica* was found in the possession of two men on Lanai. The snails were destroyed.

Mr. Pemberton also exhibited a specimen of *Buprestis aurulenta* secured from Mr. Frank Atherton's greenhouse where it had probably emerged from fresh California timber used in reconstructing part of said greenhouse.

Caroline and Marshall Island insects.—Mr. Ehrhorn exhibited a miscellaneous collection of insects, spiders, centipedes, etc., sent to him by the Rev. Clarence I. McCall, of Kusaie Island, for identification and advice regarding their damage and cure on the lands under his control. Mr. Swezey had assisted in the identifications. The specimens are deposited in the H.S.P.A. collection.

Ants collected at Kusaie, 1937:

Odontomachus haematoda (L.).
Monomorium pharaonis (L.).
Anoplolepis longipes (Jer.) ♀.
Plagiolepis sp.
Camponotus maculatus (Fab.).
Camponotus irritans chloroticus (Emery).
Camponotus sp.
Cremastogaster sp. ♀ and ♂.

Other insects collected at Kusaie, March 10, 1937:

Ex pineapple—*Drosophila immigrans* Sturt.
1 large spider.
2 small centipedes.

1 dealated termite.
3 black tenebrionids.
1 small tenebrionid.
1 scolytid.

Insects from Kusaie, Jan., 1938:
2 Derbids.
1 *Ananca decolor* (Fairm.).
1 *Dactylosternum abdominale* (Fab.).
1 *Cucujid—Inopeplus* sp.
2 Scolytids.

Insects from Jabwar, Jaluit, Marshall Is., April 27, 1938:
6 *Isometrus maculatus* De G.
5 *Scolopendra subspinipes* Leach.
2 *Oxidus gracilis* Koch.
3 *Trigoniulus lumbricinus* Gerst.
8 pill bugs.
1 sowbug.
4 spiders.
1 Noctuid caterpillar.
1 Noctuid pupa.
1 Derbid.
3 cockroaches, *Pycnoscelus surinamensis* (L.).
3 *Chelisoches morio* (Fab.).
1 *Anisolabis eteronoma* Borelli.
31 *Odontomachus haematoda* (Linn.).
1 *Paratrechina longicornis* (Latr.).
1 *Typhlops braminus*. Soil snake.

Mr. E. H. Bryan spoke of Mr. and Mrs. R. G. Wind, who passed through Honolulu recently enroute to the New Guinea region. Mr. Wind, an experienced entomologist and collector, hopes to be in the field about 2 years.

Mr. Bryan exhibited Manual of Myiology, Part VI, by C. H. T. Townsend. Sao Paulo, 1938. Diagnoses of genera in Stephanomatini, Cuterebridae, Hypodermatidae, Melanophoridae.

Mr. O. H. Swezey read an obituary notice from the Entomological Record, of Dr. Edward Meyrick, famous English entomologist.

AUGUST 4, 1938

The 392nd meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, Thursday, August 4, 1938, at 2:30 p.m.

Members present: Miss Ethel Lucas, Messrs. Carter, Ehrhorn, Fullaway, Holdaway, Illingworth, Ito, Keck, Marlowe, McBride, Pemberton, Rosa, Sakimura, Swezey, Van Zwaluwenburg, and Williams.

Visitor: F. J. Gay.

In the absence of the president and the vice-president of the Society, Mr. O. H. Swezey was appointed presiding officer for the meeting.

The minutes of the preceding meeting were read and approved.

The Secretary stated that at a meeting of the Executive Committee approved Aug. 4, 1938, the Star-Bulletin bill for $980.14 for printing 500 copies of Vol. X, No. 1, 1938, of the Proceedings of the Hawaiian Entomological Society.

Mr. Swezey, as chairman of the committee recently appointed to record purposeful introductions into the Territory, of insects and other invertebrates, read the introduction to his portion of the work and suggested that all reports be finished before the end of 1938.

He then called on Dr. Carter for a report of his recent trip and studies, for the pineapple experiment station. Dr. Carter responded with a very interesting talk.

Dr. F. G. Holdaway introduced Mr. F. J. Gay, Entomologist from Australia. Mr. Gay spoke of his work in Australia.

NOTES AND EXHIBITIONS

Aphis avenae (Fab.).—Mr. C. E. Pemberton exhibited specimens of this aphis which had been collected by J. P. Martin from roots of sugar cane growing in water cultures in a greenhouse at the H.S.P.A. Experiment Station during July, 1938. The identification was made by D. T. Fullaway and S. H. Au. This is the first host record for the species in Hawaii. It has been taken in Hawaii on only one previous occasion, when P. H. Timberlake caught a single winged specimen while on a street-car near Moiliili, Honolulu, on March 24, 1924, and determined the specimen as *Yamataphis oryzae* Mats.; a name since synonymized with *Aphis avenae* (Fab.). In the present instance the insects were massed in large numbers on the roots of the cane adjacent to and just above the water level in the water culture. This is evidently not a normal habitat for the species in Hawaii. It has never been previously recorded on sugar cane roots. It is a pest on rice roots in Japan and is listed as a grain aphis in various parts of the world.

**Anastatus* sp.—Mr. Swezey exhibited specimens of the same large *Anastatus* that was exhibited at the June meeting, having been found ovipositing in a cluster of *Holochlora japonica* eggs, May 12, by Mr. Ehrhorn. From these eggs, 14 female *Anastatus* issued between July 20 and August 1, 8 of them all appeared on the same day, July 27. This makes the life cycle from egg to adult average about 10 or 11 weeks. Only one *Holochlora* hatched from the egg cluster. It was supplied with fresh hibiscus blossoms from day to day on which it fed and grew very well for over two months, finally dying on July 26 when about one-third grown. The adults are

* Specimens were later submitted to Mr. A. B. Gahan, U. S. Bureau of Entomology, who pronounced it an undoubtedly new species of *Zaischnopsis*, a genus related to *Anastatus*.

commonly known to feed on canna and other blossoms. This new generation of *Anastatus* readily began ovipositing when supplied with a fresh *Holochlora* egg cluster.

Oligomerus obtusus Lec.—Mr. Swezey reported further on this anobiid beetle reared from oak flooring brought in June 7, 1933 (See Proc. Haw. Ent. Soc., VIII, p. 381, 1934). Pieces of infested oak flooring from the residence of John Waterhouse were held under observation since being brought in by Mr. Ehrhorn, June 7, 1393. Beetles had issued from time to time, but observations were interrupted for long intervals and the exact dates of issue are uncertain. The first two beetles issued prior to Aug 5, 1933. 7 *Sclerodermus* issued Jan. 9, 1934, and 3 more on Jan. 11. (Mr. Ehrhorn had secured 6 *Sclerodermus* from the material before it was brought in to our laboratory.) On July 16, 1935, 6 living larvae were found on examining some of the fragments of wood. Three beetles issued prior to Feb. 13, 1937 (fragments of the dead beetles were found). Two beetles issued prior to July 26, 1938 (one whole beetle and fragments of the other found). On examining a piece of the flooring July 27, 1938, a well-grown larva was found in good condition. Material saved for further developments.

Mr. C. E. Pemberton exhibited recently hatched eggs of the immigrant garden snail (*Eulota similaris*). The eggs were dug up in a cane field at Waialua, Oahu, and much resembled those of an earwig, for which they had been mistaken.

SEPTEMBER 1, 1938

The 393rd meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, Thursday, September 1, 1938, at 2:30 p.m.

Members present: Miss Ethel Lucas, Miss Amy Suehiro, Messrs. Browne, Bryan, Fullaway, Holdaway, Illingworth, Mason, Rosa, Schmidt, and Van Zwaluwenburg.

Visitor: P. I. Fagan, Jr.

In the absence of Dr. Williams, the chair asked Mr. Van Zwaluwenburg to act as secretary.

The minutes of the previous meeting were read and approved.

PAPERS PRESENTED

On behalf of Mr. R. L. Usinger the following paper was presented, "A New Genus of Pacific Island Enicocephalidae, with New Species from the Hawaiian and Philippine Islands."

A paper by Mr. P. H. Timberlake was presented by title, "A New Species of Hippodamia from Mt. Rainier." (*H. washingtoni* n. sp.)

Pseudoscorpions.—Mr. Browne exhibited specimens of a pseudoscorpion collected in numbers in rice in a warehouse at Hanalei, Kauai. They were determined by Mr. E. H. Bryan, Jr., as *Lophochernes cryptus* Chamberlin. Previously considered to be *Chelifer bifissus* Simon, a Sumatran species, it was first named by J. C. Chamberlin in "Check List of the False Scorpions of Oceania" (Bishop Museum Occasional Papers, x, no. 22, p. 11, 1934). Mr. Bryan called attention to Chamberlin's paper, "Arachnid Order, Chelonethida" (Stanford University Publication, Biological Sciences, vii, no. 1, 284 pp., 1931).

Thysanus dactylopii Timb.—Dr. Schmidt reported the emergence of this hyperparasite of mealybugs from mummies of *Pseudococcus brevipes* Ckll. which were parasitized by *Anagyrus coccidivorus* Dozier.

Eupristina verticillata Waterts.—On behalf of Mr. O. H. Swezey Dr. Williams reported that on August 5, Mr. Swezey first found the agaonid wasp, *Eupristina verticillata,* pollinator of *Ficus retusa,* the Chinese banyan, established on a large and a small tree on the Punahou campus, Honolulu. Figs containing these wasps had been sent (February–May, 1938) by Mr. D. T. Fullaway from the Philippines and Hongkong. The *Eupristina* issuing from these introductions had been liberated on trees in several parts of the city, including Punahou, Thomas Square and the intersection of King and S. Beretania Streets. On Aug. 30 Dr. Williams found these wasps also established at Thomas Square and at King and S. Beretania Sts.

Cryptothrips floridensis Watson.—Mr. Fullaway asked if the presence of the camphor thrips in Hawaii had been recorded in the Proceedings. Specimens were first collected by Dr. H. L. Lyon, who found them on camphor leaves in Honolulu, in May, 1938. Identification of the material was made by Mr. John Steinweden.

Mr. Bryan gave an interesting account of a recent trip to the Pacific equatorial islands and American Samoa, illustrating it with numerous photographs.

Mr. Arthur C. Mason, recently returned from the mainland mentioned seeing large-scale outbreaks of *Popillia* in New Jersey and of grasshoppers in the middle west, and described an outbreak of Mormon crickets seen in Nevada.

OCTOBER 6, 1938

The 394th meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, October 6, 1938, at 2:30 p.m.

Members present: Messrs. Au, Bianchi, Fullaway, Holdaway, Mason, McPhail, Rosa, Schmidt, Van Zwaluwenburg, and Zimmerman.

Visitors: Miss Margaret Poor; Messrs. M. Matsuura, A. T. Wong, Y. Tanada, and T. Yoshida.

The minutes of the previous meeting were read and approved.

The acting secretary presented a letter from the Zoological Society of London, appealing for a donation toward the support of the Zoological Record. It was moved, seconded and voted that the sum of $25 be sent the Zoological Society.

A letter was read from the Secretary of the Hawaiian Sugar Planters' Association announcing the payment by the Planters' Association of the $980.14 bill for the last issue of the Proceedings. It was moved by Mr. Zimmerman, seconded and passed, that the thanks of the Society be expressed to the H.S.P.A. for its generous contribution.

Miss Margaret E. Poor, recently appointed assistant entomologist at the Bishop Museum, was introduced, and nominated for membership by Mr. Zimmerman.

PAPER PRESENTED

Miss Poor presented a paper by Dr. C. J. Drake and herself entitled "Some Tingitidae (Hemiptera) from the Eastern Hemisphere."

NOTES AND EXHIBITIONS

Eupristina verticillata Watertst.—A note from Dr. F. X. Williams reported finding, on October 2, 1938, *Eupristina verticillata* in figs of a small Chinese banyan (*Ficus retusa*) on Pauoa Flats behind Honolulu. The recent kona weather may have aided this wasp in its ascent of nearly 2,000 feet and its progress inland of more than a mile.

Anchastus.—Mr. Van Zwaluwenburg mentioned that a comparison of larval material of the local *Anchastus swezeyi* and *Anchastus sericans* Cand. from Arizona, shows definitely that the local elaterid is not congeneric with the mainland *Anchastus.* Entirely satisfactory adult generic separating characters between the two have yet to be found.

Mr. Zimmerman gave an interesting account of his recent three-months collecting trip to the Fiji archipelago; he reported that the summer season yields a totally different entomological catch than does work during the winter months.

NOVEMBER 3, 1938

The 395th meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, November 3, 1938, at 2:30 p.m. President Schmidt in the chair.

Members present: Miss Margaret Poor, Messrs. Bianchi, Browne, Bryan, Carter, Ehrhorn, Holdaway, Illingworth, Keck,

Rosa, Sakimura, Schmidt, Van Zwaluwenburg, Weinrich, Williams, and Zimmerman.

Visitors: Minoru Matsuura, Y. Tanada, and Toyoki Yoshida.

The minutes of the previous meeting were read and approved.

Miss Margaret E. Poor was elected to regular membership in the Society.

The Secretary stated that $25.00 had been sent to the Zoological Society of London, to help publish the Zoological Record.

PAPERS PRESENTED

On behalf of Abbe Parent in France, Dr. F. X. Williams presented a paper describing Hawaiian Dolichopodidae.

Mr. E. C. Zimmerman presented a paper entitled "A New Fijian Diathetes Injurious to Pandanus." He also exhibited a fine wash drawing by Miss Poor.

NOTES AND EXHIBITIONS

Dr. Walter Carter exhibited an undetermined fly reared from decayed iris from Kauai.

Mr. Bryan exhibited a Bishop Museum Occasional Paper (XIV, No. 11) in which H. de Souza Lopes describes as *Goniophyto bryani* the Sarcophagid fly which was found so abundantly on the N. W. Hawaiian islands by the Tanager Expedition in 1923.

Mr. Ashley C. Browne stated that tomato plants growing at Puuloa, Oahu, were found on Oct. 30, 1938, to be heavily infested with the mealybug *Ripersia palmarum* Ehrh. The attack was chiefly confined to the roots and was severe enough to have killed approximately one-half the vines in a commercial planting.

Mr. F. A. Bianchi said that the fly *Agromyza simplex* on asparagus was very local at Waialua, Oahu. He also spoke of a small lepidopterous caterpillar that mined the tips of asparagus branches and pupated in its tunnel. The moth was not determined.

Dr. Walter Carter exhibited two specimens of a giant mealybug collected on a tree at Amani, East Africa. It was determined by Mr. E. M. Ehrhorn as *Lophococcus maximus* Ckll.

Mr. E. M. Ehrhorn was then called upon and gave a brief account of his recent trip to the mainland of the United States, stressing his visit among entomologists at Washington, D. C.

DECEMBER 1, 1938

The 396th meeting of the Hawaiian Entomological Society was held at the H.S.P.A. Experiment Station, Dec. 1, 1938, at 2:30 p.m.

Members present: Miss Margaret Poor, Messrs. Bianchi, Bryan, Carter, Ehrhorn, Fullaway, Holdaway, Ito, Illingworth, Keck, Rosa, Sakimura, Schmidt, Van Zwaluwenburg, Williams and Zimmerman.

The minutes of the previous meeting were read and approved.

The Secretary-Treasurer read the financial report for the Society for 1938. It was moved and seconded that this report be accepted, subject to examination by an auditor. The president appointed Mr. E. M. Ehrhorn as auditor.

Mr. K. Sakimura presented the report on the purposeful introductions into the Territory, of beneficial insects and other invertebrates, made by the Pineapple Producers' Experiment Station since 1930.

ELECTION OF OFFICERS FOR 1939

President	Fred. A. Bianchi
Vice-President	R. H. Marlowe
Secretary-Treasurer	F. X. Williams
Additional Members of Executive Committee	W. Weinrich E. C. Zimmerman

The matter of increasing the price of the Proceedings of the Hawaiian Entomological Society, from $0.75 per number to considerably more, was brought up for consideration. The president left this matter to the executive committee for future recommendations.

PRESIDENTIAL ADDRESS AT ANNUAL MEETING

The retiring president, Dr. C. Schmidt, delivered his annual address on "Musings of an Armchair Philosopher." This interesting paper brought forth considerable and animated discussion.

PAPERS PRESENTED

Mr. E. C. Zimmerman presented two papers entitled as follows: "Proterhinus of Hawaii (Coleoptera: Aglycyderidae)," and "Cis of Maui and Lanai (Coleoptera: Ciidae)." Mr. K. Sakimura presented a paper "On the Host Plants of Some Hawaiian Thrips" (by title only). Dr. F. X. Williams presented a paper on "Biological Studies in Hawaiian Water-Loving Insects, Part III; Diptera or Flies, B. Asteiidae, Syrphidae and Dolichopodidae." Mr. R. H. Marlowe presented a paper entitled: "Note on *Ananca bicolor*."

On behalf of Mr. R. L. Usinger, Mr. D. T. Fullaway presented a paper entitled: "Distribution and Host Relationships of Cyrtorhinus (Hemiptera, Miridae)."

Mr. D. T. Fullaway presented a paper entitled: "New Species of Proctotrupid Wasps from Bishop Museum Collection of Samoan and Fijian Insects."

NOTES AND EXHIBITIONS

Isoneurothrips australis Bagnall.—Mr. Bianchi reported finding this thrips on the flowers of *Eucalyptus robusta* in the Honouliuli Forest Reserve. No eggs were seen, but both sexes, young and

adults of the insect were exceedingly abundant among the numerous stamens of the flowers. This constitutes a new record for the Territory. Mr. Bianchi's observations lead him to think that in *Eucalyptus robusta* this thrips feeds on the abundant exudation which ordinarily covers the inside walls of the calyx cups, and is not, therefore, visibly injurious to the host plant. The small brown areas on the stamens and calyx cups which in Australia have been recorded as injuries caused by the thrips' feeding, appear under the microscope to be due to a fungus that is to be found widely spread among the *Eucalyptus robusta* trees of Honouliuli. Mr. Bianchi plans further research on this matter.

With three as yet undescribed species reported by Mr. Sakimura (Proc. Haw. Ent. Soc. Vol. X, No. 1, p. 167), this makes the tenth species of Isoneurothrips known from Hawaii and the eighteenth from the world. It is the type species of the genus Isoneurothrips Bagnall, and has been found in South and West Australia, Tasmania and Victoria. In its original habitat it is most abundant on varieties of Eucalyptus with fleshy stamens but the larvae, at least, are also found on the flowers of plum, apricot, peach, and pear.

Dr. C. Schmidt transmitted a rapid technique for whole mounts of small invertebrates—as follows: "Dioxane" for 15–20 minutes for dehydrating and clearing, and then mount in "Diaphane" for a permanent mount.

Mr. D. T. Fullaway reported that he recently found the buprestid beetle *Agrilus extraneus* Fisher working in unhealthy or perhaps dead monkey pod (*Samanea saman*) branches.

Mr. Fullaway also stated that Dr. Mason, Government Entomologist at Washington, D. C., was of the opinion that our common taro aphis was *Rhopalosiphum nymphae* (Linn.). It has hitherto been considered as *Aphis gossypii* Glover.

Dr. Walter Carter spoke of the use of "meta," a German dry alcohol preparation, against the Giant African Snail *Achatina*. It is mixed with bran, at the rate of $\frac{1}{2}$ oz. of meta to each pound of bran. It is broadcast or made into heaps. Refs.: Jnl. Rubber Inst. Malaya, Vol. 8, Jan. 1938; Tea Quarterly, Vol. XI, part II, June 1938.